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ABSTRACT

This paper relates recent research findings to conceptual and practical considerations that pertain to educational television for adults. Issues discussed focus on (1) identification of the adult learner, (2) the learning needs of adults, (3) roles television can play in adult education programs, and (4) guidelines for designing programs for adult learners. Studies by the authors on the learning styles of adults are among the research projects cited. (STS)

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THE ADULT LEARNER AND EDUCATIONAL TELEVISION

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THE ADULT LEARNER AND EDUCATIONAL TELEVISION

Adult educational programs are proliferating at a rapid rate throughout the United States. One reason for this rapid increase is the use of different media and delivery options in these programs. College level courses have been offered through the newspaper, storefront learning centers, television, radio, or computer modules. Many adult education programs have been taken out of the classroom and placed into the community or learners' homes. These programs are more flexible and, as a result, new avenues have been opened to adult learners who previously could not avail themselves of more traditional classroom continuing education courses. One of the delivery systems that is significantly adding flexibility to educational programs and increasing educational opportunity for adults is television. This paper will briefly summarize research and our experiences in the areas of the adult learner and educational television. We hope that it is of particular value to developers, researchers and producers who design educational television programs for adults. The specific questions that will be addressed are the following:

--Who is the adult learner?

--What are the learning needs of adults?

--What are some roles television can play in adult educational programs?

--What are some guidelines for designing television programs for at-home adult learners?

Who Is the Adult Learner?

Interest in the adult learner has increased greatly over the past two decades. Michael O'Keefe (1976), in a policy study prepared for the Aspen Institute for Humanistic Studies, suggests the following reasons for this

increase in interest:

1. Policy discussions and actions in a number of European nations have stimulated U.S. educators to consider the applicability of such practices in this country (Britain's Open University; social legislation in France, Germany and Sweden providing for worker sabbaticals to pursue further education and training; Organization for Economic Cooperation and Development publicity for the concept of "recurrent education," etc.).

2. Adults are becoming more visible because there are more of us and because our society is becoming progressively older.

3. Women's role in society is changing. More women desire to move into the labor market, and the higher divorce rate increases the need for women to return for some form of education to ease the entry back into the work force.

4. The proportion of the traditional college-age group that begins post-secondary studies has apparently leveled off and current projections indicate that by the early 1980's college enrollments will begin to diminish in absolute numbers. Hence the post-secondary education system must expand to new markets.

5. The rate at which adults participate in education has also increased significantly over the past five to ten years.

Given that adult learners have been discovered, what do we know about them? National surveys of adult education programs (Johnstone and Rivera, 1965; Carp, et. al., 1973; U.S. National Center for Educational Statistics, 1976) give general profiles of the "adult learner" but little information on specific sub-groups. The general profile is this:

1. Sex: More women than men continue their education.

2. Age: Most adult learners are middle aged, in their 30's and 40's. They have not been to school in some time. Older adults (post 55) are underrepresented in the population of adult learners.

3. Goals: Vocational goals still predominate although there is evidence to suggest that this emphasis is shifting. General education demand has remained relatively unchanged or dropped slightly. Interest in avocational subjects (e.g. crafts, leisure time activities, recreational and faiily development) has greatly increased. There appears to be a shift to non-credit courses, at the expense of academic credit courses.

4. SES level: Those who have education tend to seek more; the education level of participants is markedly higher than non-participants. Participants have higher yearly incomes than non-participants.

5. Employment Status: Most adult learners are in full time work either in the home or in outside employment.

6. Minorities: Minorities, especially blacks, are underrepresented in adult education programs.

7. Ratio: The percent of adults participating in continuing education programs has increased yearly and is now at 12.3% of the total U.S. adult population.

These findings have been confirmed by a UNESCO survey of international open learning programs (McKenzie, et. al., 1975). The primary exceptions are in those countries where the status of women restricts their activity in educational programs or where literacy training is a major component of adult education.

What are the Learning Needs of Adults?

These data, while perhaps interesting, do not answer any questions about the design of instruction. Facts and figures, especially from large international, national, and program surveys don't relate who these people are, what types of problems they have and how materials, in particular educational television programs, can be designed to meet the needs of these learners. There are really two aspects to the question of learning needs: one is related to adults and the other to the particular needs of the at-a-distance adult learner. We will discuss each in turn.

As Knowles (1969) and European educators before home have pointed out, when we think of education we tend to think of educating the young. The term "andragogy" was coined to illustrate the need for rethinking the relevance of pedagogy for adults. Developmental psychologists (Havighurst, 1953; Erikson, 1959; Neugarten, 1963; Gould, 1972; Levinson, 1974) have studied the process of adult development in the hopes of providing a theoretical framework for adult development similar in nature to the Piagetian framework for children. Gail Sheehy has brought the nation's attention to the issue of life stages and the development of the adult in her best seller Passages. Educators such as Knox (1968), Chickering (1975) and Weathersby (1976) have attempted to take these

developmental principles and apply them to educational contexts. As yet, this work has not provided the educator with a firm basis of research and theory on which to base programs. Nevertheless, the writing of many of these people do present a beginning.

One finding is that principles of good teaching generally apply to adults as well as children. In a sense then, the similarities between effective pedagogy and effective andragogy are greater than the differences. Having said this, most writers highlight the following "unique" aspects of adults: breadth of life experiences; demands on their time; varied and competing sources of attention; approach toward the learning task and inactivity of learning and studying skills.* 'Approach to learning' is generally taken to mean that adults are more problem-centered than discipline-centered in their learning. Concomitant with the problem-centered approach is the tendency for adults to look for immediate application and relevance of learning. Adults cannot afford to waste time and many consider abstract treatments of a subject as a nonproductive and use of time.

Another perspective of the learning needs of adults can be gained by examining the typology of adult learners first postulated by Houle (1961). In this view there are three general types of adult learners: the goal-oriented adult, the activity-oriented adult and the learning-oriented adult. While this typology has many exceptions it does have value in helping to explain why adults partake of educational experiences. Some adults are goal-oriented in the sense that they want to complete a course, get a certificate, or obtain credit. Depending on the adult's goal, the learner may strive to complete a course if

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* Data from our experiences with the State University of Nebraska program generally support these findings, especially the fact that adult learners are extremely busy people, have competing time priorities and experiences difficulty in getting back to studying.

accreditation is the goal. These learners may also possibly drop out (or slow out) after gaining the information they needed in a course. The activity-oriented adult is more interested in the socialization provided by the adult learning experience. The intellectual and social environment of the program are extremely important to these adults. One would, therefore, not expect to find activity-oriented adults in individualized or at-home learning programs. The learning-oriented adult is interested in learning for learning's sake. This person has a thirst for knowledge, wants to keep an active mind and probably reads a lot in addition to course work. The needs of each of these three types of learners are different.

Our own work with adult learners in Nebraska has looked at the learning styles of adults (Forman, 1975; Forman and Richardson, 1977). We have found two rather distinct groupings of adult students. The first group is comprised of active, independent learners. They have a high academic self concept, active minds and take frequent advantage of informal and nonformal educational opportunities. The second group are less sure of their academic abilities, have a difficult time working through the materials, dwell on every sentence, and take tasks very seriously. For this latter group study materials, aids such as learning objectives, recommended study schedules, advance organizers, review questions and sample answers are important. The first group do not really use these learning aids; they would rather read the essays and take the tests without much fanfare. The others, however, are slow, cautious and need reinforcement and direction; they often do excellent work but their cognitive styles take them a different route.

What do these findings tell us? First, adult learners are diverse. They take courses for different reasons, favor different instructional treatments and have varied preferred ways of proceeding through a course. Children also have many diverse learning needs but adults because of their breadth of life experineces

and particular reasons for engaging in an educational program, are an even more diversified learning audience. Any single educational treatment, if it is aimed at the adult learner in general, will be more efficient and effective for some and less for others. If a course is aimed at a particular subset of the adult learning audience, its chances of achieving success and providing instruction that is both effective and efficient is greater. Second, inspite of the variety of skills, aptitude and experiences in adults, there are some general guidelines that can be followed. We have generated guidelines for an adult, study at-home program.* They pertain to print materials but they are applicable to other media as well.

1. Materials should engage the student as an active learner. Activites which take students into the community or cause them to apply the course to their own lives are particularly valuable.

2. Materials must raise interesting and exciting questions. The subject should be important and relevant to students' interests and personal experiences.

3. Assignments should ask students to apply knowledge gained in the course. Overly abstract or purely theoretical treatments have not been successful.

4. Materials must be carefully structured. Precise study directions need to be given. What must be done, why it must be done, and what is to be done next, must be clear, or students will experience unnecessary difficulties with the course.

5. The student workload must be consistent across all units, in terms of time, difficulty and student requirements. Students need to be able to pace themselves.

6. Materials must be edited to eliminate undefined terms and excessive use of jargon. Students quickly become disenchanted if the materials are misleading and if terms or phrases are ambiguous. Pictures or visualizations should be included whenever possible.

7. Diagnostic learning aids should be included in the print materials to help students assess their progress through the course. They should be able to diagnose problems and seek corrective action, if appropriate. Examples of such aids are learning objectives, self-assessment questions and student activities.

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* Guidelines which pertain more directly to classroom based adult education programs can be found in many sources, including Knowles (1968) and Knox 1968).

8. Opportunities for personal contact should be optional but available. Some possibilities are WATS phone calls to course tutors or faculty member visits to local sites. Another possibility is to create a network of learners and to provide the chance for learners to contact each other. All students may not take advantage of these opportunities but the opportunities should exist.

If materials are well-designed and comprehensive, learning-at-home programs have many advantages for adults. They can fit their studies into their occupational and personal lives. They can control the pace and amount of study and do it on a schedule convenient to them. Anxious, out of practice learners have the chance to see if they can successfully complete academic course work. However, if materials are poorly designed, many of the potential advantages of at-home study are lost.

What Are Some Roles Television Can Play in Adult Educational Programs?

Up to this point we have focused on descriptive information about adult learners and their educational needs. We now turn to a consideration of educational television as one component in open learning, multimedia courses. We will also attempt to formulate some guidelines for educational television from our experience with the design and development of such programs. But first a few introductory remarks about the increasing role of television in educational programs.

While television and education have had a checkered and stormy relationship over the years, there now appear to be prospects for a closer, healthier bond. There are several reasons for this change. First, proponents of instructional and educational television are not now suggesting--as they once were--that television can do it all. It has become clear that television will not replace the classroom teacher. It is most effectively used as a supplement to other forms of instruction. Classroom teachers are now more involved in planning, developing and delivering television; earlier ETV was imposed on them. Second, there are subjects or topics which should not be taught via the television medium. The

focus is now on finding what television can do best and limited TV to these areas. Third, successes in the field of children's educational television, most notably Sesame Street, have shown how high-quality programming can teach; these programs showed that educational television can be interesting, fun, and still effective.

What roles can television play in adult education programs? It has been firmly established that television can teach as well as traditional instructional methods (Chu and Schramm, 1967; Moldstad, 1974; Jamison, et. al., 1974); this is certainly one role. But what can television teach and are there other equally important roles--whether educational or programmatic. In particular, people involved in adult education programs need to ask: What can television do for adults who are busy, haven't studied for a number of years, are a little uncertain of their academic ability, have a great variety of life experiences, and have a number of family and personal responsibilities?

Again, the research has not been able to provide answers. The best answers to date are from the experiences of successful operational programs. The most extensive list of the various roles that television can play in educational programs has been developed by the Open University of the United Kingdom. This list of the different roles of television in open university course was compiled by Alan Bates (1974):

1. To demonstrate experiments or experimental situations.

2. To bring to students primary resource material, i.e. film or video-recordings of actual situations which, through editing and selection, can demonstrate principles covered in the units.

3. To record specially events, experiments, species, places, people, buildings, etc., which are crucial to the content of units, but may be likely to disappear, die or be destroyed in the near future.

4. To bring to students the views or knowledge of eminent people, who are often prepared to be televised or filmed but not to write material specially for the institution.

5. To change student attitudes:
   (a) by presenting material in a novel manner, or from unfamiliar viewpoint.

(b) by presenting material in a dramatized form, enabling students to identify with the emotions and viewpoints of the main participants.
(c) by allowing the students to identify closely with someone in the programme who overcomes problems or himself changes his attitudes as a result of evidence presented in the programme or televised exercise.

6. To explain or demonstrate activities that the students are to carry out (e.g. home experiments, survey interviewing).

7. To feed back to students 'mass' or total results of activities or surveys carried out by the students themselves, where the 'turn-around' time is too short for printed feedback.

8. To illustrate principles involving dynamic change or movement.

9. To illustrate abstract principles through the use of specially constructed physical models.

10. To illustrate principles involving two-, three-, or n-dimensional space.

11. To use animated, slow-motion, or speed-up film or video-tape to demonstrate changes over time (including computer animation).

12. Through performance, to demonstrate methods or techniques of dramatic production, or different interpretations of dramatic works.

13. To demonstrate decision-making processes:
(a) by filming or observing the decision-making process as it occurs.
(b) by dramatization.
(c) by simulation or role-playing.

14. To condense or synthesize into a coherent whole a wide range of information which in print would take up considerable space and would not provide the richness of background material necessary for students to appreciate fully the situation.

15. To demonstrate how basic principles have been applied in the real world, where visualization of the application in its total environment is necessary to understand the way the principle has been applied, and the difficulties encountered.

16. To test students' ability, by requiring them to apply concepts or principles learned elsewhere in the course; by explaining or analysing 'real-life' situations presented through television.

17. To demonstrate the use of tools or equipment, or the effects of tools or equipment.

18. To demonstrate methods of playing instruments, and the relationship between music, musicians and their instruments.

19. To increase students' sense of belonging; identification of and with course designers; to make the teaching less impersonal.

20. To reduce the time required by students to master content.

21. To pace students; to keep them working regularly; to break the inertia in beginning evening study.

22. To recruit or attract new students (either to the university or to specific courses); to interest general viewers in subject matter.

23. To establish academic credibility of the course to 'outside' world.

As valuable as this list is, it is somewhat unwiedly. It also fails to address some of the other roles that television can play. We would like to propose the following typology of various roles television can play in education programs for adult at-home learners. The typology consists of two broad types of roles--teaching and programmatic--and the following seven more specific categories: knowledge; cognitive skills and strategies; affect; motor skills; student support; public access and program support. Table 1 shows the relationship between the categories and types of roles for educational television.

TABLE 1: TYPOLOGY OF THE ROLES
OF TELEVISION IN EDUCATIONAL PROGRAMS

Teaching Roles	
Knowledge	Facts
	Concepts
	Generalizations
Cognitive Skills and Strategies	Critical Thinking
	Problem Solving
Affect	Interests
	Attitudes
	Values
Motor Skills	Job-Related Skills
	Tasks
	Handicrafts, Sports
Programmatic Roles	
Student Support	Pacing
	Drop Out and Completion
	Motivation to Study Further
	Contact with Students
Public Access	Involve Informal Viewing Audience
	Attract New Students
Program Support	Publicity and Visibility
	Cost Effectiveness

The teaching roles of television should not present surprises to anyone involved in teaching or familiar with classification schemes of knowledge and activity such as those espoused by Bloom (1956) or Gagne (1970). It is important to note, the variety of teaching roles that television can perform; the research often tends to focus rather narrowly on only one aspect, usually low-level cognitive information (i.e., facts). Affect, cognitive skills and strategies skills and higher forms of cognitive information must not be neglected. Because television has the characteristic of simultaneous audio and visual presentation outcomes whether intended or unintended in all of the teaching roles can be observed. Like all instructional media, however, it is important for a television program to have a clearly defined purpose, role and audience; all of the teaching roles cannot be fully developed nor can the program be everything to all people. Choices must be made.

The programmatic roles of television are not so well known and we are just now beginning to explore their impact. These program roles result from the fact that the television programs are broadcast over the mass media and that the programs and the organization are highly visible to the student and non-student audience alike. There is a growing body of evaluation and survey data to indicate that, for example, television does provide a type of support system to the at-home learner (Forman and Brown, 1977). Students say that television helps pace their studying and post-course results indicate those students who watch television programs are more apt to complete the course than those who do not. There are other comparative data that suggest that regularly scheduled broadcast television programs facilitate course completion. The following comments by Bates (1974b) pertain to programmatic roles outlined in the typology.

> ...there is a strong feeling in the mathematics faculty that without the support given by television the dropout rate would be much higher. The assumption is that television programmes assist the students' understanding and lead to quicker assimilation of the material and, at the same time, give students the psychological boost of feeling that they belong to an organization with real people, however remote or distant these may be physically (p. 173).

The public access role also seems to be extremely significant. We have evidence that for certain courses we have developed over one hundred times as many casual ETV viewers watch television components of courses than do students (Forman and Brown, 1977). If educators are truly interested in widening educational opportunities for all adults and not just those who enroll, then this nonenrolled, ETV viewing audience must be included in consideration of the importance of television to adult educational programs. Unfortunately, very little is known about this casual viewing audience and what benefits, if any, they receive from watching programs.

What does the typology tell us about the design of educational television for adults? In terms of specific guidelines, not much; but both the typology and the list prepared by Bates illustrate that television can perform a variety of roles in an educational course. It can teach, contribute to program development and provide support for the student. The actual selection of what television should do in a particular course is dependent on an analysis of the learner, the educational task, the message to be conveyed and, of course, the attributes of the television medium (Salomon, 1974). Resource, time and logistical matters are also significant considerations. The typology cannot offer assistance in media selection or allocation decisions; each case has too many unique features. But in designing television programs it is important to be aware of the variety of roles delineated in the typology and to start selectively choosing which roles will be emphased.

What Are Some Guidelines for Designing Television Programs for At-Home Adult Learners?

Even when the purpose and role of a series of television programs have been clearly defined, a number of questions remain. How can the programs achieve their intended purpose? What types of programs are appealing and informative for adults? What specific techniques and format are most effective for the adult audience? What design features are effective for adults? Again, there are no eternal answers supplied by the research (Salomon and Clark, 1977).

> Research on media and technology in education appears in many forms and styles. However, its yield in terms of understanding media, guiding their utilization or improving education was and still is quite disappointing.

But guidelines based on practical experience are available. We have compiled a list of such guidelines for adult educational television programs. All of these points are common knowledge to good producers and good teachers but it is surprising how often they are disregarded in the development of programs. Most of these guidelines are grounded in what we have learned about adult learners both from research presented earlier in this paper and our experiences in developing and evaluating adult educational television poograms. The guidelines are grouped under the general categories of structure and design, content, format and technical considerations.

Structure and Design Guidelines

1. Carefully monitor the balance between information imparted and non-content-related material. Adult learners are busy, task-oriented people and they become disenchanted if the television program is wasting too much time. Character or plot development must be accomplished without resorting to banalities or unrelated dialog. Adults do not like wasted time.

2. Closely integrate the television program with the print materials. If the television programs repeat too many parts of the print materials, students will stop watching and merely read the written materials. But if programs do not relate at all to the other materials, students will stop watching because the programs are not relevant. A closely integrated program is one that complements the print materials and does not repeat them: a

case study, a highlighting of the main points, or a presentation or primary source material.

3. Be clear about the purpose of the program. While commercial television viewers often tolerate programs that wander aimlessly in search of two or three memorable moments (whether jokes or action sequences), ETV viewers have different expectations: they want to learn something. The program, therefore, must have a purpose and the developers should have a clear idea what the viewers should get from watching the program. Bates, in an Open University report, discusses how students often have difficulty in identifying the function of broadcasts. This is especially true the more the television program departs from the lecture format. The purpose, then, must be clear to the student or confusion and frustration will arise.

4. Insure logical and consistent organization within the program. When viewers get lost, their attention wanes and they are likely to exercise their right of channel flipping. Devices such as introductions, overviews, transitions, conclusions and summaries are necessary. They need not be pedantic or overt and they must not be condescending. Visual cues or a short sentence or question may be sufficient. This is one of the most controversial points between the production and design staffs, but repeatedly in evaluation esssions, viewers indicate they need this structural framework. The task then becomes finding creative ways to execute what could otherwise kill the rhythm the program has established.

5. Do not treat too many topics. A common fault of several of our earlier productions was that programs tried to treat 10 to 15 topics. The viewers complained that the treatment was too abstract and vague. Television is to an extent a superficial medium when compared to print, but it doesn't have to be that superficial! We have found that three to five main points per program is a useful guideline.

6. Properly develop main points. The main points that are presented need to be fully developed. They need to be explained; in instructional design jargon, they need to be illustrated by examples and non-examples. Viewers become frustrated if main points are not clearly made. Television presents special opportunities for combined audio and visual reinforcement and the use of digital, iconic and analogue codes. It is a rich medium and its richness should be used to its fullest to establish the goals of the program. Where appropriate, graphs, sound effects, music charts, maps and animations can be used to effectively develop an idea.

7. Carefully monitor the pace or flow of information imparted. When information is presented in too hurried and frenetic fashion, viewers tune out because they cannot keep up with the information flow. Statistics and facts are often very important in developing main ideas, but when they are quickly reeled off, they cannot be adequately processed in short term memory. Because television

programs cannot be repeated at will, information that is not processed on the first pass will confuse the learner. We have not developed a content analysis scheme which offers prescriptions about pacing of information. Instead, we have to rely on formative evaluation procedures in which evidence on pacing is gathered from learners, staff members and designers.

8. Communicate the time/place orientation throughout the program. This point has emerged time and time again. On many occasions, viewers have been unsure what time period or location is being presented on a program. As they struggle to figure it out, they stop processing new information. This is a frequent concern because during each 30 minute program there may be eight to ten changes in time or location. Maps are useful in establishing location orientation and a simple, direct phrase or superimposed title can establish time frame.

Content Guidelines

9. Choose content carefully so that it is interesting and important. The program must have a clearly defined purpose and must integrate well with other materials. But even if these conditions are satisfied, the program could be boring and pedestrian. Content areas should be chosen which present interesting situation, pose important problems or address relevant social, political, economic or moral issues. Each program does not have to be crammed full with these types of points; the question of balance within a program and the purpose of the program are obviously crucial. But if program developers want to attract a non-student viewing audience for the programs, interesting and important content must be presented.

10. If possible, use content that relates to the everyday life of the viewers. Present situations which viewers acutally confront. If the material has a direct application and if the learners recognize the problem and see how the program will help solve it, it is well received. Again, it may not be possible to take this approach in each course or each program but when we have used it, the results have been very positive.

11. Incorporate personal experiences into the content treatment. Show the impact of the subject on the lives of people. In history and social science programs, first hand accounts such as diaries or newspaper articles can be used for this purpose. Statistics can also be effective. Interviews can also be used but they must be done convincingly and honestly. Personal accounts often breathe life to the materail, giving it new meaning and an added dimension for the viewer.

12. Treat the content critically. Do not sidestep controversial issues or fail to cite conflicting interpretations. Overly romantic or superficial treatments will be quickly spotted by viewers and will undermine the credibility of the program. One of educational television's charges should be to provide insightful and analytic discussions and while these are lofty goals they should be aspired to.

Format Guidelines

13. Avoid condescending dialog. If viewers feel they are being talked down to, they will lose all respect for the program and will likely stop watching the series. "Cute" scenes, gimmics and artificial humor are also greatly disliked. Viewers are quickly disenchanted with what they feel is an "adult Sesame Street" approach.

14. Storyline format can heighten interest and provide an effective framework for the presentation of material. There are obviously many different ways to present content to the viewer and a well-conceived and organized visual lecture can be just as effective as any format. We have found, however, that if the main points are interwoven in a storyline, the impact can be very great. While more information can be transmitted in lecture format, the dramatic treatment focuses attention and makes a much greater impression on the viewer. The reception of the Adams' Chronicle, one of the most-watched series in PBS history, attests to this fact. The dramatic storyline format also has great risks; it is expensive and difficult, even with ample resources, to attain an excellent production.

15. Maintain a balance between visual styles. A rather predictable evaluation finding is that our students generally prefer film footage, synch on-location scenes and photo animation voice overs to on-camera, in-studio time. But another finding is that visual variety in a program is tremendously important. Elements such as live film, existing film clips, pictures, paintings, maps, charts and drawings all add variety to a film; and when a program concentrates on one of these sources to the exclusion of the others, the program loses vitality. Likewise if narration is all on-camera, the program is less flexible and less visually exciting.

16. Develop interviews carefully. Interviews are a high gain-high risk proposition. If done properly they can add a personal dimension to the material and the audience will develop a close empathy with the person interviewed and the program. But the dangers are also great. The short, superficial "Pepsi Cola" approach to interviewing won't work; an interview cannot last 30 seconds and accomplish anything substantive. Our viewers have reacted uniformly negatively to quick, person-on-the-street interviews. Likewise, they have been very critical of staged or phony interviews. The interviews that have worked have been those where ample time was available for several statements about an issue, where the person was at ease, and where the delivery was natural.

17. If appropriate, involve the viewer in the program. The CBS Drivers' Test program and the program on the diagnosis of breast cancer are good examples. Children's programs, especially "Sesame Street" and the Electric Company" also attempt to make

the views more active.* We have included multiple choice review questions and problem situations requiring a decision on television programs. In general there has been a favorable reaction to these questions by adult learners, except when the questions were obvious, too simple and condescending.

18. Have a strong start and a strong finish. It is amazing how often we violate the cardinal rule of television: a good, strong tease to attract viewers attention and a good, strong ending to cap their experience and get them to tune in next time. The educational needs for an overview or advance organizer at the beginning of the program and a summary or concluding statement at the end need not weaken the program. An overview can be an effective lure for the audience; it is probably not the producer's first choice for a strong beginning, but it can be made to work.

Technical Guidelines

19. Make sure the music is appropriate. The importance of music and sound effects to an educational television program cannot be underestimated. We have often conducted television evaluation sessions where comments about the distracting music, the fact that it was too loud and interfered with the audio transmissions or that it is simply inappropriate are frequently made. And like most of the points raised in this section on technical guidelines, one problem in this area can undermine the entire program. Once a person decides he doesn't like the music, chances are very great that the impact of the program will be significantly reduced. It is interesting to note that people may not "notice" the music if they don't have problems with it.

20. Insure a close audio-visual relationship. When the words and visuals do not match up, the viewer reaction is predictable and swift. Sloppiness in editing is very apparent to viewers and they can quickly lose interest in a program which does not have a high degree of technical quality.

21. Recognize the crucial role of the host or narrator. Perhaps the quickest go or no-go decision about the program is based on the personality and delivery of the host. Every viewer has an opinion about this person; and if the viewer's reaction is negative, it will definitely impede what they receive from the program. The host should be at ease on-camera and not obviously reading lines. In instructional and educational television, academics are often used in host roles. This is done for budgetary reasons and also to establish an authority figure. It has been our experience that there are few academics who can effectively perform the host role; they work better in expert interview or panel discussion format but even here there are difficulties.

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* Palmer (1974) refers to this attribute as "activity eliciting potential."

22. Make graphics clear and understandable. As already discussed, maps, charts, tables and graphs can be used to develop main points. But their potential impact will be lost if the graphics themselves are not clear. Typical problems with graphics are that 1) the number or letters are too small, 2) there is too much on the graphic--that is, they should be simple and direct, 3) the color separations are not distinct enough, and 4) the graphics are not on the screen long enough.'

23. Be consistent with the use of superimposed titles. If supered titles are to be used, there should be a clear rationale statement about when they will or will not be used. We recommend being as judicious as possible. Questions about their use arose in an accounting course in connection with problems on the screen, with a course having many foreign words and in a history course for the purpose of establishing locations and dates.

Conclusion

This paper has discussed the learning needs of adults, the role of television in at-home learning and specific guidelines for designing effective educational television. The need for more knowledge about designing instruction for adult learners is great, especially in light of the increasing popularity of adult and continuing educational programs. Even less is known about the development of effective educational television for adults. This paper has attempted to relate recent information about the adult, at-home learner to conceptual and practical considerations that pertain to educational television. An important question that it attempts to answer is how can television be developed to meet the educational needs of people who have a reservoir of life experiences, competing time demands and a different orientation to learning than younger learners. We are only beginning to find answers to this question.

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